

CLAIMS

1. A modular, multi-functional, hand-held surveillance system comprising:
 - a. A base unit having a receiving assembly;
 - b. A component unit having a mounting assembly, wherein the receiving assembly in the base is adapted for accepting the mounting assembly for securing the component unit to the base;
 - c. An electrical interface in the base;
 - d. An electrical interface in the component unit and adapted for engaging the electrical interface in the base when the base and component unit are in mounted assembly;
 - e. A power supply in the base and adapted for communicating with the component unit through the base and component unit interfaces when the base and component unit are in mounted assembly;
 - f. A control system in the base and adapted for communicating with the component unit through the base and component unit interfaces when the base and component unit are in mounted assembly;
 - g. A locking system for locking the base and the component unit in mounted assembly.
2. The system of claim 1, wherein the receiving assembly comprises a channel slide mounted on the base and wherein the mounting assembly comprises a rail system mounted on the component unit and mated with the channel slide, whereby the component unit is adapted for sliding into the channel slide.
3. The system of claim 2, wherein the electrical interfaces comprise a plug and receptacle combination mounted on the base and the component unit in a manner adapted for sliding engagement and contact when the component unit is slidingly mounted on the base.

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4. The system of claim 2, wherein the locking system includes interlocking components in the base and the component unit adapted for engaging when the component unit is slidingly mounted on the base.
5. The system of claim 1, wherein the component unit further comprises a night vision camera.
6. The system of claim 1, wherein the component unit further comprises a day vision camera.
7. The system of claim 1, wherein the component unit further comprises a laser range finder.
8. The system of claim 1, wherein the component unit further comprises an RF probe.
9. The system of claim 1, wherein the component unit further comprises an NBC detector.
10. The system of claim 1, wherein the component unit further comprises a FLIR system.
11. The system of claim 10, wherein the FLIR unit is an uncooled FLIR.
12. The system of claim 10, wherein the FLIR unit is a cooled FLIR.
13. The system of claim 12 wherein the FLIR unit is cooled by a solid state thermionic device.
14. The system of claim 1, wherein the base module is a military sensor computer.
15. The system of claim 14, further including connector interfaces for connecting cables to the base for external communication devices.
16. The system of claim 1, wherein the base module is an MMR unit.
17. The system of claim 16, further including connector interfaces for connecting cables to the base for external communication devices.
18. The system of claim 1, wherein the base further includes connector interfaces for connecting cables to the base for external communication devices.

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19. The system of claim 18, wherein the communication devices include a breakout box.
20. The system of claim 17, wherein the communication devices include a communications link.
21. The system of claim 1, wherein the electrical interface in the base is adapted for cable connecting external devices to the base.
22. The system of claim 1, wherein the control circuit is adapted for shared use of image processing hardware and software for noise reduction for multiple component units.
23. The system of claim 1, wherein the control circuit is adapted for the shared use of image processing hardware and software for contrast enhancement for multiple component units.
24. The system of claim 1, wherein the control circuit is adapted for the shared use of Motion Detection and Alarm hardware and software for multiple component units.
25. The system of claim 1, wherein the control circuit is adapted for the shared use of image stabilization hardware and software for multiple component units.
26. The system of claim 1, wherein the control circuit is adapted for the shared use of contrast enhancement hardware and software for multiple component units.
27. The system of claim 1, wherein the control circuit is adapted for the shared use of image cropping hardware and software for multiple component units.
28. The system of claim 1, wherein the control circuit is adapted for the shared use of image processing filtering functions for multiple component units.
29. The system of claim 1, wherein the control circuit is adapted for the shared use of image compression hardware and software for multiple component units.
30. The system of claim 1, wherein the control circuit is adapted for the shared use of communications protocols, hardware and software for multiple component units.
31. The system of claim 1, wherein the control circuit is adapted for the shared use of digital

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storage hardware and software for multiple component units.

32. The system of claim 1, wherein the control circuit is adapted for the shared use of geolocation hardware and software for multiple component units.

33. The system of claim 1, wherein the control circuit is adapted for the shared use of power supply hardware and control software, and common battery types for multiple component units.

34. The system of claim 1, wherein the control circuit is adapted for the shared use of video processing hardware and associated software.

35. The system of claim 1, wherein the control circuit is adapted for the shared use of video zoom hardware and software for multiple component units.

36. The system of claim 1, wherein the control circuit is adapted for the shared use of an electronic viewing device for multiple component units.

37. The system of claim 1, wherein the control circuit is adapted for the shared use of user interface controls for multiple component units.

38. The system of claim 1, wherein the control circuit is adapted for the shared use of a handgrip for portable use of multiple component units.

39. The system of claim 1, where in the control circuit housing is adapted for the shared use of tripod for holding

40. The system of claim 1, wherein the control circuit is adapted for the shared use of electronic interface for sensor data to other systems for multiple component units.

41. The system of claim 1, wherein the control circuit is adapted for the shared use of mounting equipment for multiple component units.

42. The system of claim 1, wherein the control circuit is adapted for supplying a common mechanical and electrical method of attaching various sensors to a control module and for providing support and electrical interface.

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43. The system of claim 1, wherein the control circuit is adapted for supplying a common user interface with similar commands for similar functions between multiple component units.
44. The system of claim 1, wherein the control circuit is adapted for the use of an attachable an attachable image intensifier module on the base.
45. The system of claim 1, wherein the control circuit is adapted for the use of an attachable radiation detection and analysis module on the base.
46. The system of claim 1, wherein the control circuit is adapted for the use of a thermionic cooler to cool a focal plane array FLIR.
47. The system of claim 1, wherein the control circuit is further includes a storage device for storage of sensor setting parameters in non-volatile memory in the sensor module.
48. The system of claim 1, wherein the control circuit further includes dynamic menus adapted for changing with the change of component units.
49. The system of claim 1, wherein the control circuit further includes the capability of downloading code and commands.
50. The system of claim 1 the control circuit further supporting the use of an http browser.
51. The system of claim 1, wherein each module includes and iris for collecting the image and an image intensifier tube, wherein the control circuit further includes an image intensifier module for electronically adjusting the gain based on balancing the image quality with the noise level in the system.
52. The image system of claim 51, wherein there is a plurality of modules and wherein the image intensifier module is compatible with each of the various modules.
53. The image system of claim 1, the component adapted for generating a stream of frames of video or images, and wherein the control circuit is adapted for processing raw video as generated.

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54. The image system of claim 1, the component adapted for generating a stream of frames of video or images, and wherein the control circuit is adapted for averaging sequential frames for producing an enhanced image.
55. The image system of claim 1, wherein multiple frames are averaged.
56. The image system of claim 55, wherein up to sixteen sequential frames may be averaged.

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